



SDMS Doc ID 2004957

# Mike Girard's Very Unofficial Status on Perchlorate Toxicology and Ecological Studies

Update: 18 April 2000

Activity and Lead Agency	Objective	Status	Schedule
1. Pathology Working Group (PWG)  <i>EPA / NIEHS</i>	Develop consistent nomenclature and scoring system for reading of thyroid and brain slides across all toxicology studies.	PWG convened 15-17 March 2000	NIEHS will prepare draft report, request comments from invited participants and submit final report to EPA in May 00.  Common nomenclature and scoring will be applied to thyroids from "effects" protocol and other relevant studies.
2. Immunotoxicity Studies  <i>PSG : Burleson Research Technologies / Air Force Research Labs, Wright-Patterson AFB (hormone analysis)</i>	Repeat of Sheep Red Blood Cell (SRBC) assay due to deficiencies in original study. Conducting an additional assay that evaluates delayed-typed hypersensitivity.	Study in progress	90-Day and 14-day studies complete. Study slides provided to PWG, serum samples sent to Air Force Research Lab (AFRL) for analysis (results complete). Second study with control and 50mg/kg dose group in progress. Final report to NCEA; 31 May 2000
3. Adult Male Rat Study and PK Model Development  <i>DoD : AFRL WPAFB</i>	Model inhibition mechanism plus hormone changes in adult male rats.	Initial model almost complete	Study complete. Currently working on adult rat model. Data package by 15 March 00 (SOT poster). Model and data to EPA in June 00.
4. Pregnant Lactating Female Rat Study and PBPK Model Development  <i>DoD : AFRL WPAFB</i>	Model inhibition mechanism plus hormone changes in adult female rats during pregnancy and lactation (critical effect seen during lactation in first study set). Extension necessary to evaluate dosimetry for current critical effect in pups.	Study in progress	GD 20/PND 5 pups sacked, first data set available 1 March 00. PND 10 in progress, additional data sets through August 00. Lactation model under development. Begin Pregnancy model late April 00. Data sets and initial models to EPA in June 00.

FYI  
Mike also mentioned  
Ker McGee study  
just out on Chilean  
children no effect  
Clap up to 110 ppb

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5. Motor Activity Study in Pups <i>DoD : US Navy</i>	Additional collection of motor activity data due to variability in original study	Study in progress	Pre-study testing complete. Pups born, study in progress. Data available 1 June 00
6. Interlab Hormone Analysis Validation <i>DoD : AFRL WPAFB</i>	Achieve consistency in hormone analysis between laboratories.	Study includes 3 labs evaluating T3, T4 and TSH results from each lab	Study complete. Report under review, expect final report to EPA in June 00.
7. Human PK Model Phase I <i>DoD : AFRL WPAFB</i>	Model inhibition mechanism plus hormone changes in adult male humans; single exposures and repeated (14-day) regimen.	Initial PB/PK model developed based on literature and preliminary human data	Preliminary Human PK Model Theoretical model in progress. Data available 15 March 00. Inclusion of Braverman and Brabant Human Study results into Human PK Model by 1 June 00.
8. Human PK /RAIU Study <i>PSG : Oregon Health Sciences University (UHSU)</i>	Supports Human PK Model Phase II (AFRL WPAFB) with iodide uptake inhibition mechanism plus hormone changes in adult male humans; repeated (14-day) regimen.	Study in progress	Dosing has begun on human subjects. Data sets to be delivered incrementally to AFRL. Complete data set to EPA June 00.
9. Perchlorate Effects Study <i>PSG : Premedica Labs (Argus)</i>	Examines brains, thyroids, and hormones during key developmental stages in rats that correspond to time points in Study 4. Will meet data base requirements of guideline developmental study in second species.	Study in progress	Dosing began 28 December 99. Data available 1 June 00.

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<p>10. Site Specific Ecological Impacts Investigation</p> <p><i>DoD : Brooks AFB</i></p>	<p>Bioaccumulation analysis of eco systems in known affected areas: Lake Mead, Nevada; Indian Head, Maryland; specific portions of the lower Colorado River; McGregor, Texas; and White Sands, New Mexico. Sites should be representative of soil types and climate considerations.</p>	<p>Protocol development in progress. Draft SOW complete and in review.</p>	<p>Schedule to be determined upon completion of SOW and receipt of protocols from contractor. Initial site visit for Lake Mead, NV and Indianhead, MD complete and contractor hired. Lower Colorado and White Sands pending. Anticipate receipt of protocols in May 00.</p>
<p>11. Farm Gate Food Analysis</p> <p><i>DoD : Brooks AFB</i></p>	<p>Evaluate potential impact to crops in areas where irrigation water contains perchlorate and representative of climate and soil types: corn, soy, oranges, milk and lettuce. Representative of farming practice and growing season (harvest). Factors governing uptake and potential bioaccumulation, soil conditions and mass balance to be characterized. Requires extension and validation of analytical methods to plant and animal tissues.</p>	<p>Funding approved Coordinating with FDA, USDA, EPA and state parties. Draft protocol complete and in review.</p>	<p>Sampling could begin 2<sup>nd</sup> quarter 2000. Crop availability effects sampling timing. Inclusion of preliminary results in NCEA peer review is anticipated. DoD coordinating funding issues USDA.</p>
<p>12. Soil Column Study</p> <p><i>EPA : NERL Athens (under contract with the USAF)</i></p>	<p>Analysis of perchlorate transport within various types of soil columns.</p>	<p>Funding approved</p>	<p>Schedule to be determined.</p>
<p>13. Developmental embryonic toxicology in amphibians.</p> <p><i>University of Oklahoma (under contract with the USAF)</i></p>	<p>Determines a concentration/response curve for amphibians exposed to perchlorate and determine the ability of perchlorate to bioaccumulate in amphibians.</p>	<p>Funding approved</p>	<p>Kick-off meeting May 00.</p>

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14. Phytoremediation of perchlorate by woody plants  <i>University of Georgia (under contract with the USAF)</i>	Investigate degradation of perchlorate in woody plants.	Funding approved	Kick-off meeting May 00.
15. Analytical detection capability and validation (groundwater, blood, urine, soy, citrus etc).  <i>EPA : NERL Athens, NRMRL DoD : AFRL WPAFB and Brooks AFB</i>	Maintain credibility in detection capabilities.	Funding approved	On going activities including drinking and groundwater, urine and blood. Plant and animal tissues still in coordination. WPAFB has completed methods for serum, urine and tissues.
16. Treatment Technology  <i>DoD : Tyndall AFB with industry partnership</i>	Coordinate cleanup technology development.	Funding approved	First preliminary meeting with technology group held during AWWA conference. Comprehensive meeting planned.

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	1701	05-21-2003	FRC RECORDS	111-11-1111	1	PERCHLOR

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